



Whistler Design Preview

April 20 & 21



Remote Emergency and Bring up Management of Windows

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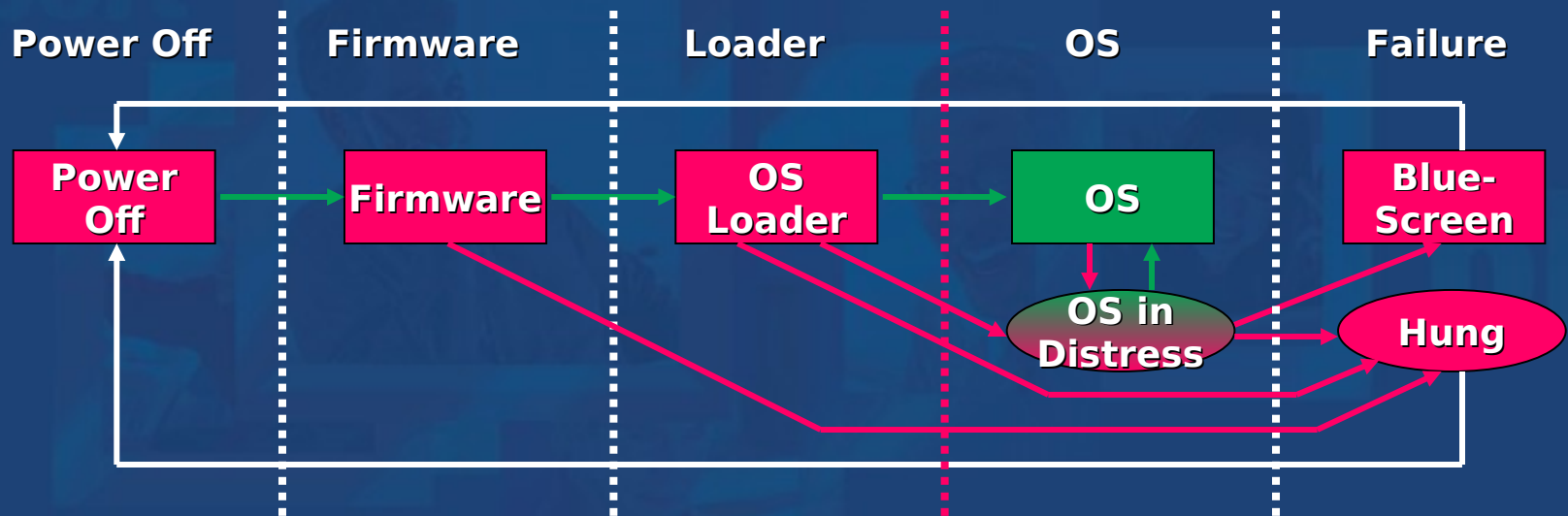
Agenda

- **Introduction to concepts and terminology**
- **Headless support in Windows Whistler**
Hardware Software Integration
 - **service processors, ASICs and uninterruptible power supplies**
- **Wrap up**

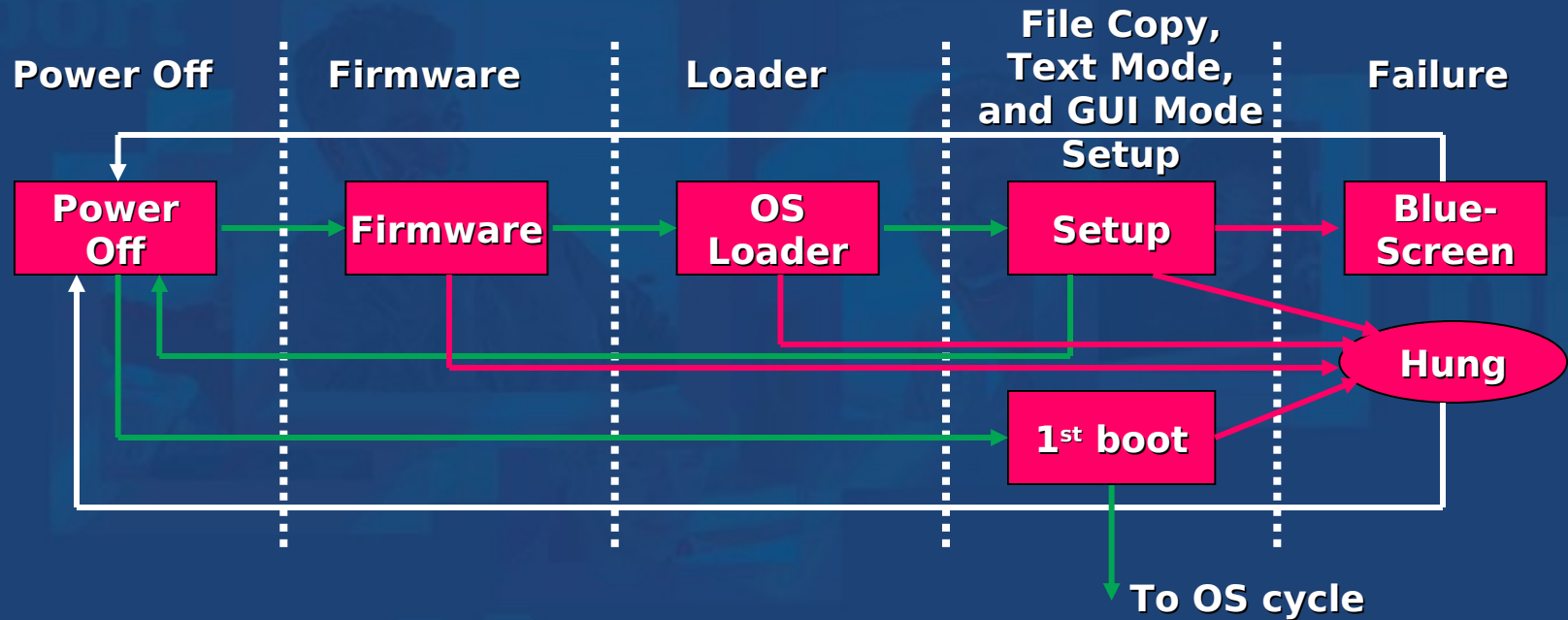
What Is A Headless Server

- **A server that allows complete remote administration from power-on to disaster recovery**
- **Never require access to the hardware except for physical maintenance**
- **“Server in a closet” or “server behind a glass wall”**

System States



Setup System States



In Band VS Out of Band

- **In Band**
 - Uses the network as communication medium
 - Available only when the OS is functioning
 - Logical security handled by OS
- **Out of Band**
 - Interface may vary
 - More reliable if separate from In Band medium
 - Available even when the OS isn't

Background:

Windows NT® 4.0/Windows 2000 Out of Band solutions

- **Use custom hardware to redirect screens**
 - Redirecting BIOS
 - Onboard ASICs
 - OEM boards (most only text)
 - KVM switch boxes
- **Other tech**
 - Intelligent UPS
 - Serial console
- **Current tips and best practices**
 - ftp://ftp.microsoft.com/services/isn/ops/readme.*

What's Coming In Windows Whistler

In Band Management

- **In band uses standard Windows management tools**
 - **Improved Terminal Services administration mode (see the local console)**
 - **WMI**
 - **Scripting**
 - **Telnet**
 - **MMC**
- **Note ISVs provide additional tools**
 - **Management suites**

What's Coming In Windows Whistler

Hardware Dependencies

- **Headless Emergency System Management**
 - No keyboard, mouse, or monitor required
- **On ACPI systems no keyboard controller required**
 - Note: USB allows optional keyboard attachment
- **Null VGA driver**
 - Removal of video card requires proper management hardware to replace

What's Coming In Windows Whistler :

Out of Band Management

- **The goal is always to return the system to the OS state**
 - Small reliable set of Out of Band management tools
 - Use In Band tools for general management
- **Serial out of Band Management**
 - COM1 or COM2
 - 9600 baud (19.2k for legacy ASIC support)
 - 8n1
 - VT100 (plus extensions)
 - Unix interoperability
 - Note: EMS and the kernel debugger cannot share the same port

Out of Band Management

Emergency Management

- **Redirection of text screens over serial**
 - Loader
 - Text mode setup
 - Blue screen
 - Recovery Console
 - Remote Install Services (supported on servers in Windows Whistler)

Out of Band Management Emergency Management Services (EMS)

■ **Secure Admin Console (SAC)**

- **High priority driver**
- **Highly reliable**
 - **Does it's own Memory Management**
 - **Restricts calls into other system components**
- **Simple command-line interface (NOT cmd.exe)**
- **Allows commands aimed at reviving or resetting the system**

Out of Band Management Emergency Management Services (EMS)

■ SAC Commands

- t tlist
- k <pid> kill
- l <pid> lower priority to minimum
- r <pid> raise priority by 1
- m <pid> limits memory usage (uses job object)
- i query/set ip address
- s query/set system
time/date
- Restart Clean restart
- Shutdown Clean shutdown
- Crashdump Crashes the system, creating a
dump file if Windows is so
configured

What's Coming In Windows Whistler

- **Headless a server feature**
 - **Not professional**
 - **Too much infrastructure**
 - **Eventual roll-down to profession**
If...
 - **One wire network solution**
 - **Inexpensive Hardware**

Headless Support Tools

- **Bridge**
 - Windows-based terminal concentrator
 - Multiple serial ports
 - Provides a serial terminal that can be accessed via CMD in Telnet or sockets
 - Some limitations (vt100 compatibility)
- **Watcher**
 - Simple administrator tool
 - Watches output from multiple telnet sessions
 - Hosts a window for each session
 - Looks for text patterns
 - Pops up dialog on administrator machine and creates a WMI events
 - Future: Will expand
 - Improved WMI support

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Executive Discussion

Brian Valentine
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Executive Discussion

- **Thank you for your participation**
- **Your input is very valuable**
- **Q&A**

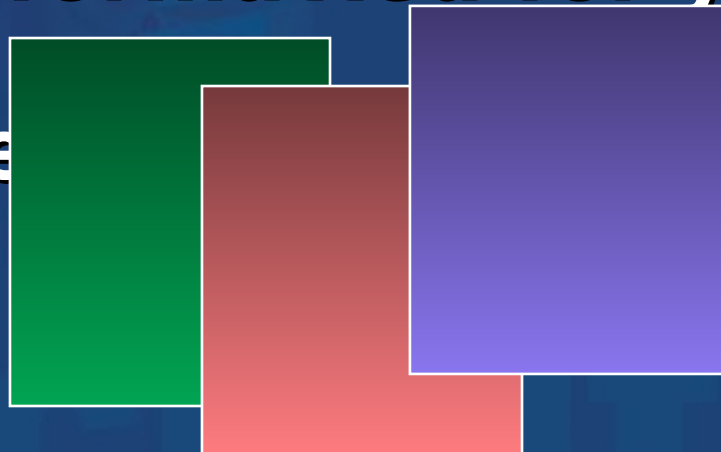
PowerPoint Template

Subtitle color

- **Select File/Save As**
- **Select File/Slide Setup choose On Screen Show**
- **See next slide for guidelines**

Slide Guidelines

- Slides should emphasize key points
 - Limit to 6 lines per slides
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